

Minutes
Atlas Uranium Mill Tailings Relocation Committee Meeting
Grand County Council Chambers, Moab, Utah
Friday, March 29, 2002
10:00 AM to 12:30 PM

Subcommittee members in attendance:

Bill Hedden – Grand Canyon Trust (Subcommittee Chair)
Lance Christie - Grand County
Ron Hochstein - IUC
Joel Berwick - DOE-GJO
John Elmer – MacTech- GJO
Tom Rice - Ute Mountain Ute Tribe
Wayne Nielson - NPS
Mike Hunter - NPS
Craig Leavitt - UDOT
Karen Robinson - self
Loren Morton - UDEQ/DRC
Bob O'Brien - UDEQ/DERR

Observer: Franklin Seal - Moab Time Independent

Joel Berwick, DOE, provided an overview of the tailings relocation options -

Klondike Flats Site:

- North along Highway 191, transport tailings on a to-be-built shoulder/highway widening improvement currently being planned by UDOT;
- Use a slurry pipeline to transport tailings to Klondike site;
- Rail haul tailings via existing tracks with loading and unloading improvements/facilities at both ends;
- Abandon railroad (UPRR owned) and transport by mine-haul truck along railroad grade.

IUC Proposal:

- Slurry tailings south along existing and new pipeline right-of-ways to IUC's White Mesa Uranium Mill Site south of Blanding.

Summo Minerals Proposal:

- Truck haul to Summo's Lisbon Valley Copper mining operation. Onsite disposal details not available.

Disposal at existing commercial facilities:

- ECDC, Carbon Co. Rail haul tailings to a to-be-built disposal cell within ECDC's permitted facility. ECDC not currently licensed to receive radioactive waste.
- Envirocare, Tooele Co. Rail haul to Envirocare facility. New disposal cell would be required to accommodate the large volume of materials from the Atlas site.

General discussion of options:

Truck haul on railroad grade – It would be difficult to widen the railroad grade to accommodate large mining trucks, especially making the road wide enough for two-way traffic.

Critical areas – South from 7-Mile Wash to the Atlas site. This area has few options to expand existing right-of-ways (rail or highway) due to the narrowness of the canyon. This section also contains steep grades.

Temporary haul roads built in conjunction with UDOT's plans to widen and improve the section of H191 from Moab to Dead Horse turnoff – UDOT is currently in the design phase for this expansion. RFP to be released this fall, with construction beginning as soon as Spring, 2003.

Use the widened/improved shoulder of H191 to run mine-haul trucks transporting tailings to the Klondike site. The mine-haul trucks discussed were estimated to be 24' wide, with a 270-ton load capacity.

The UDOT representative pointed out the improvements planned for this stretch of H191 include additional passing lanes among other improvements, but plans do not include making this stretch a four-lane divided highway. Also noted that there is probably not enough room in many sections of this stretch to make the improvements necessary to accommodate the mine-haul trucks. Most critical point is the roadcut immediately west of the Arches headquarters turnoff.

General safety concerns with this alternative were also expressed by several committee members, including: 1) traffic congestion near the Arches headquarters turnoff, 2) dust control for the mine-haul truck side of the roadway that could cause accidents on the other side of H191, and 3) proximity of normal highway traffic to the large mine-haul trucks and potential for collisions/accidents.

Note: Earlier informal estimates conducted for the Grand County Task Force indicated that it would take approximately one year to complete the haul (to Klondike site) using 13 of the 270-ton mine-haul trucks.

Another option raised was to slurry or conveyor the tailings to the Dead Horse Point road, then transfer them to on- or off-road trucks for the remainder of the trip to the Klondike site. It was thought this might be a way to get the tailings through the narrow, steep grade sections in the lower part of the canyon.

A slurry pipeline is feasible, and has been used worldwide in the mining industry. A successful slurry option would be dependent on such things as proper particle size and control of pH to avoid corrosion. The possible high cost of installation of the pipeline would also have to be considered.

An earlier cost estimate for an over-the-road truck haul of the tailings was discussed. The estimate, conducted by Atlas' consultants, ranged from \$150 million (50% confidence interval) to \$191 million (95% confidence interval), in 1995 dollars. It was agreed that today's estimates for relocation need to be, regardless the transportation mechanism, based on: 1) number of tons of tailings to be moved, and 2) unit cost per ton to move them.

UDEQ's experience at the Portland Cement Superfund Site in Salt Lake City was discussed. UDEQ moved 824,000 tons of cement kiln dust and contaminated soil via rail in about 18 months. Approximately 5500 tons/day were excavated and loaded onto rail cars per day. The material was transported 150 miles one-way to the ECDC Disposal facility in Carbon Co., Utah. The project was considered conceptually similar to the potential relocation of the Atlas tailings.

NPS representatives voiced concern of the potential impacts to visitors to Arches NP during the implementation of any of the relocation alternatives, particularly those associated with the road-haul alternative. One purpose of the highway expansion project is to alleviate congestion at the Arches headquarters turnoff – extra truck traffic (mine-haul truck or highway truck) might defeat this improvement.

Bill Hedden discussed recent feedback to the GCT regarding the slim likelihood of any additional funding from Congress for the Atlas Tailings Project, emphasizing the need for relocation alternatives more nearly cost competitive with capping.

The committee also discussed the possibility of using the "Old Arches Road" (a Grand County Road) as an alternate haul road for either over-the-road trucks or mine-haul trucks to move the tailings to the Klondike site. Little was known regarding the condition of the road and the overall alignment. Use of the road as a haul route would require: 1) construction of a new dirt road north of 7-Mile Wash that could run east of the existing campground facilities and extend beyond the Dalton Wells area (finding an alignment that would allow crossing of Courthouse Wash could be difficult), and 2) the installation of at least two crossings of H191. Bill Hedden will contact Dave Warner with the County Road Dept. for their input into the general feasibility of this alternative.

Overall, either truck haul scenario has the advantage of load and haul, without any interim handling of the tailings.

DOE explained that a road truck haul over the H191 would require: 1) construction of an access ramp to the highway along the eastern portion of the mill site area in order to allow trucks to smoothly merge with regular traffic, and 2) a truck leaving the site every

2 minutes. UDOT explained that current traffic on H191 consists of about 13-14,000 vehicles /day, with about 30% of these being trucks.

Slurry Pipeline Alternative:

The general information on this alternative was presented by Ron Hochstein, IUC:

The technology for slurry pipelines comes from mining industry applications. The control of grain size and pH are important factors in proper function of a slurry line. Processing (grinding) or blending of the tailings may be required prior to sending the material into the pipeline. Two pipelines are planned, one pipeline (12") to carry the tailings slurry south to the IUC White Mesa facility, and a recycle pipeline (10") to return the water to the Atlas site for re-use. A bridge would be constructed over the Colorado River for the pipelines. After completion of the project IUC would leave the bridge in place for bike and foot traffic. The pipelines would follow existing pipeline right-of-ways to approximately La Sal Junction. From there to IUC's White Mesa Uranium Mill Site, new alignments and right-of-ways would have to be established. IUC envisions two pumping stations to keep the system pressurized to 2800psi - one pump station at the Atlas Site, and another near La Sal Junction. The slurry in the pipe would run about 55-60% solids. Water in the pipeline could be supplied by IUC from Recapture Reservoir, Colorado River water, and/or contaminated groundwater pumped from on-site. Once the material arrives at the White Mesa facility, the tailings would be dewatered via a filter press to 10-15% moisture content, then hauled by truck and placed in lined disposal cell. Based on State requirements for Envirocare, IUC current design for new cells calls for single flexible membrane liner (FML) over a clay subgrade. No leak detection system is planned for the disposal cell. An undetermined amount of the tailings may be reprocessed by IUC to extract recoverable uranium. This portion of the tailings would be temporarily placed in an onsite "wet" cell prior to reprocessing.

UDEQ staff informed IUC that: 1) White Mesa groundwater quality is much better than the Class IV aquifer at Envirocare, and 2) that additional discussions between UDEQ and IUC would be required to determine the number of FML and leak detection systems that would be required at the White Mesa site. Cold weather tailings management and disposal was cited as a technical consideration that must be surmounted with the slurry option. Ron Hochstein said that IUC engineering staff are familiar with cold weather construction needs and will overcome them.

IUC did not provide a cost estimate for the slurry pipeline proposal, but predicted it would be less than the Klondike rail haul option. IUC is currently working on refining an estimate, and may have one available in about 3 weeks. The question did come up as to whether Davis-Bacon wage rates would apply to the slurry pipeline project if implemented, or not. It was concluded that the Committee did not have enough information at this time to make that determination. However, IUC did express a belief that this could be a significant source of cost savings, in that upon arrival at White Mesa the tailings would become property of IUC, Title II mill tailings (instead of Title I), and therefore Davis-Bacon wages would not apply.

Ron Hochstein mentioned that the San Juan County Commission has expressed an interest in leaving the slurry pipelines in place after completion of the project. Pipelines would then be used to divert Colorado River water to the Blanding area.

Tom Rice, Ute Mountain Ute Tribe representative, noted to the committee that the Ute Mountain Ute Tribal Council recently passed a resolution opposing the plan to construct the slurry line to IUC's White mesa facility. The resolution, besides opposing the slurry pipeline, further directs DOE to consider other alternatives for the Atlas tailings that do not impact the community of White Mesa.

Other relocation options discussed:

The idea of a conveyor system, similar to Peabody Coal Co.'s coal conveyor near Black Mesa, AZ, was suggested. Additionally, the idea of a "tube" conveyor was suggested. It was thought that a "tube conveyor" design might help retain the tailings material on a lengthy conveyor belt if implemented, and avoid the need for frequent decontamination of the belt. A short conveyor might move the tailings to a truck loading facility on the county road beyond the road cut west of Arches. This would eliminate the worst pinch point on that route.

Summary of relocation options:

1. Rail haul via existing line;
2. Mine-haul truck on rail grade;
3. On-road truck haul via 4-lane improved H191;
4. Mine-haul truck on temporary road co-located with H191 improvements;
5. Mine-haul truck on "old County road", joining new or co-located road from 7-Mile wash road north to Klondike;
6. Conveyor system (open or tube) from tailings pile to Klondike.

It was concluded that options 2, and 4 are currently not feasible.

For next Meeting:

- DOE and UDEQ to refine issues and cost estimate for rail haul alternative.
- DOE to scope on-road-truck and mine-haul truck options as coordinated with UDOT plans for H191 improvements and Grand County road department consultation on the "old county road". Preliminary ton-mile cost estimates will be provided.
- DOE to scope full length conveyor options, with ton-mile estimates.
- Opportunity will also be provided for other parties to make brief presentation to the Committee regarding other ideas for moving the tailings. Bill Hedden to set agenda after getting list of other parties from DOE-GJO. Ron Hochstein

volunteered to give presentation on general concepts for tailings slurry technology.

Date and time of next meeting:

Wednesday, May 1, 2002
Grand County Council Chambers, Moab, Utah
9:00 AM – 1:00 PM